



RAFT CLEANER

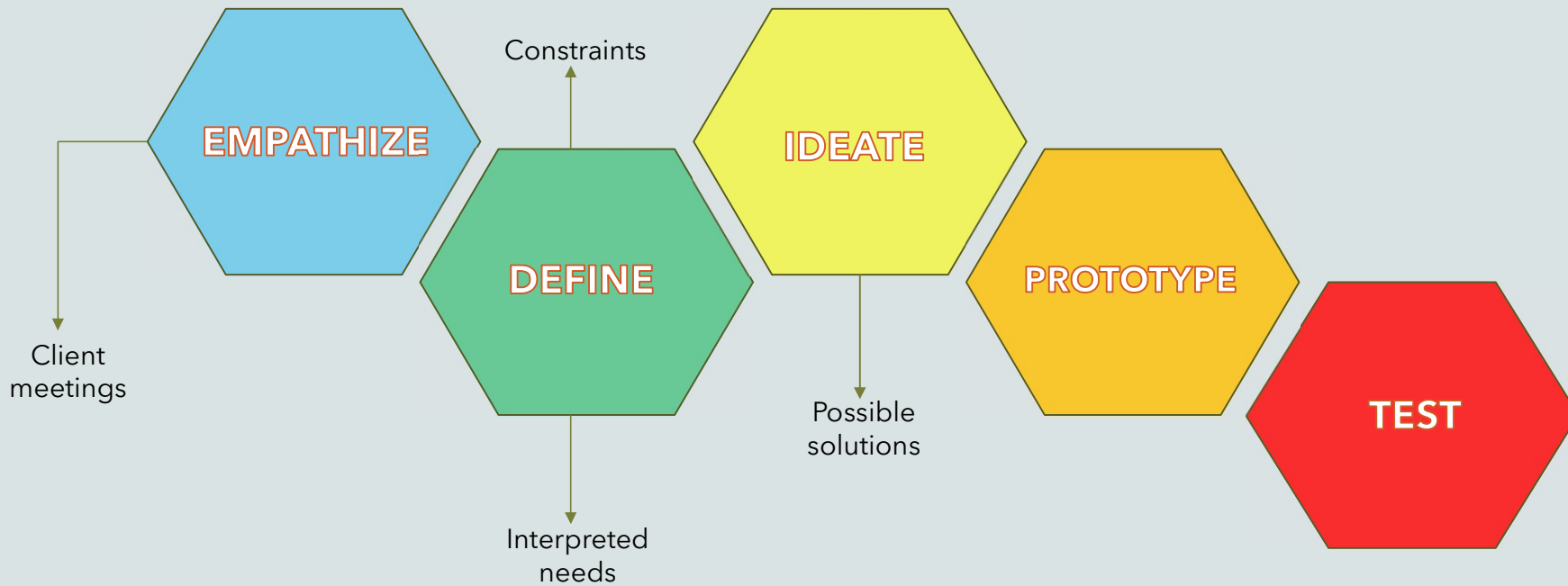
Cleangineers

- Chunhao Han
- Adam Goodyer
- Domenick Mann
- Bobby Irgashev
- Mithilesh Ramdany

A detailed technical drawing of a mechanical part is shown on a white sheet of paper. The drawing includes various lines, circles, and dimensions. A metal compass is positioned in the upper left, with its legs resting on the drawing. A metal divider is placed horizontally across the middle of the drawing. A metal ruler with millimeter markings is positioned horizontally across the lower middle. The tools are made of polished metal, likely brass or steel. The drawing features several dimension lines with arrows and numerical values. One dimension is labeled $\phi 35$, another is $\phi 40$, and a third is S_1 . The overall scene is well-lit, with soft shadows cast by the tools.

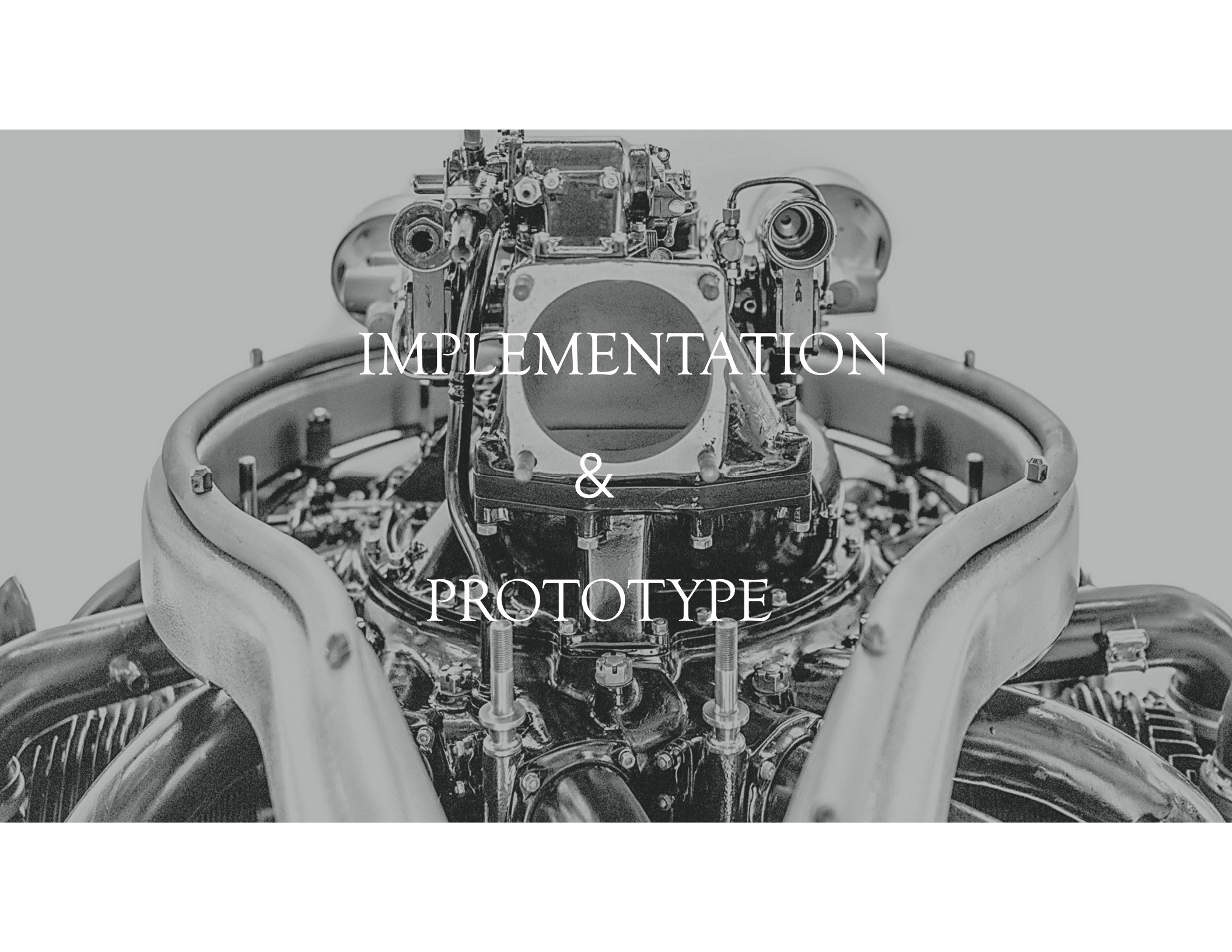
ENGINEERING PROCESS

THE PROCESS



PROBLEM STATEMENT

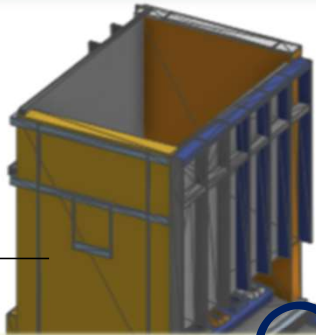
- To design a raft board cleaner for the Growcer company for their hydroponic system, which is easy to use, automated to reduce labor requirements, and efficient and thorough in cleaning coupled with reliability.



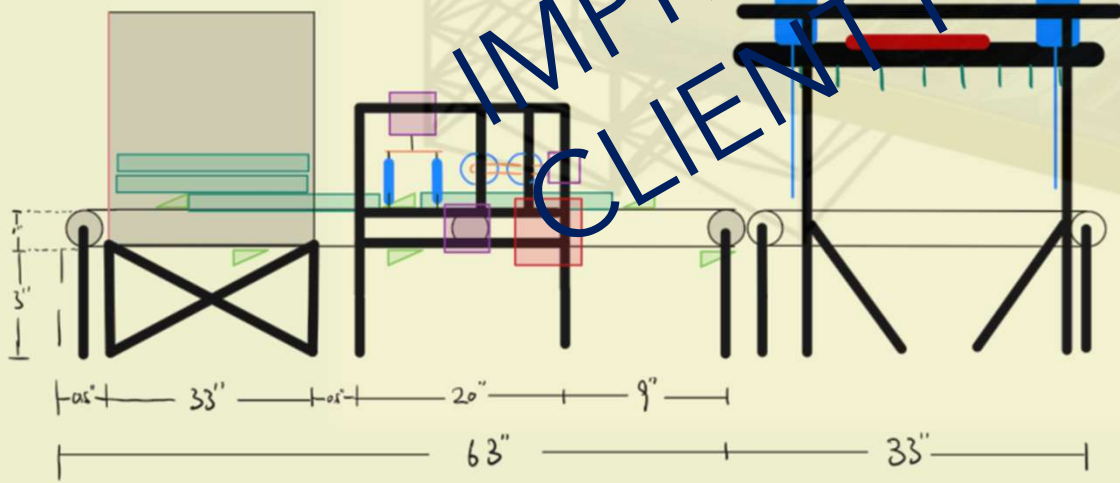
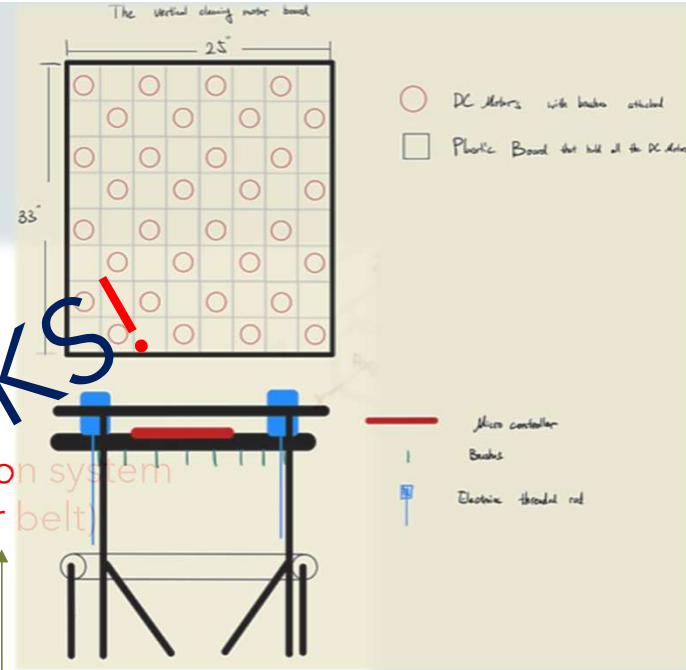
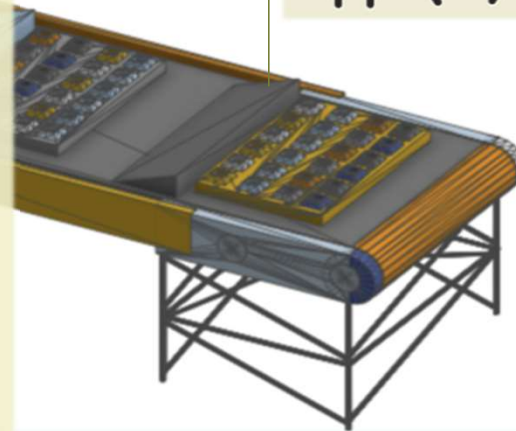
IMPLEMENTATION
&
PROTOTYPE

IMPLEMENTATION

Storage system
(Board Tank)

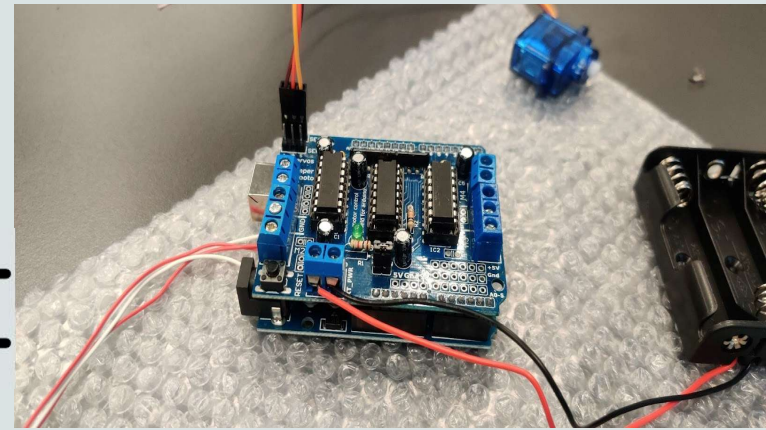
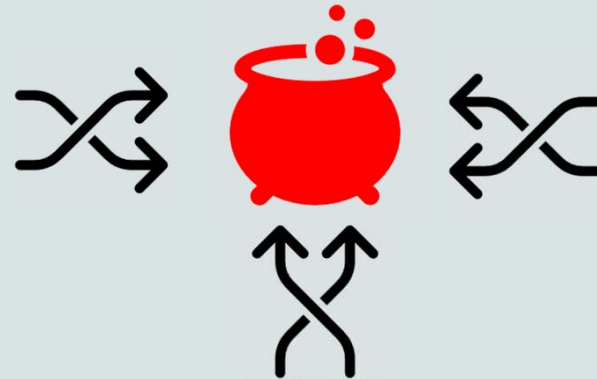


Distribution system
(conveyor belt)



IMPROVED FROM
CLIENT FEEDBACKS!

PROTOTYPE



A close-up photograph of a hand holding a blue pencil, poised to write on a test paper. The test paper features multiple-choice questions with bubbles for answers. In the background, another person's hands are visible, also working on a test paper, suggesting a classroom or exam setting. The lighting is warm and focused on the hand and pencil.

TEST RESULTS & SOME INTERESTING FACTS

TEST RESULTS

- Based on our test performed we were able to achieve a **99%** cleanliness.

- $$\frac{\text{Amount of dirt removed}}{\text{Amount of dirt placed}} \times 100$$



SOME INTERESTING FACTS

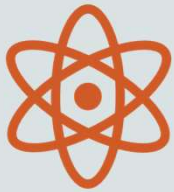
- Amount of labor work required:

1. Prepare bucket of detergent - 2 min
2. Soak the rafts in sanitol - 20*5s
3. Load the rafts in the machine - 3 min
4. Clean the front and back of each rafts - 20*3 min

75
min



MORE INTERESTING FACTS



Dislodging force of
algae ~ 100 N

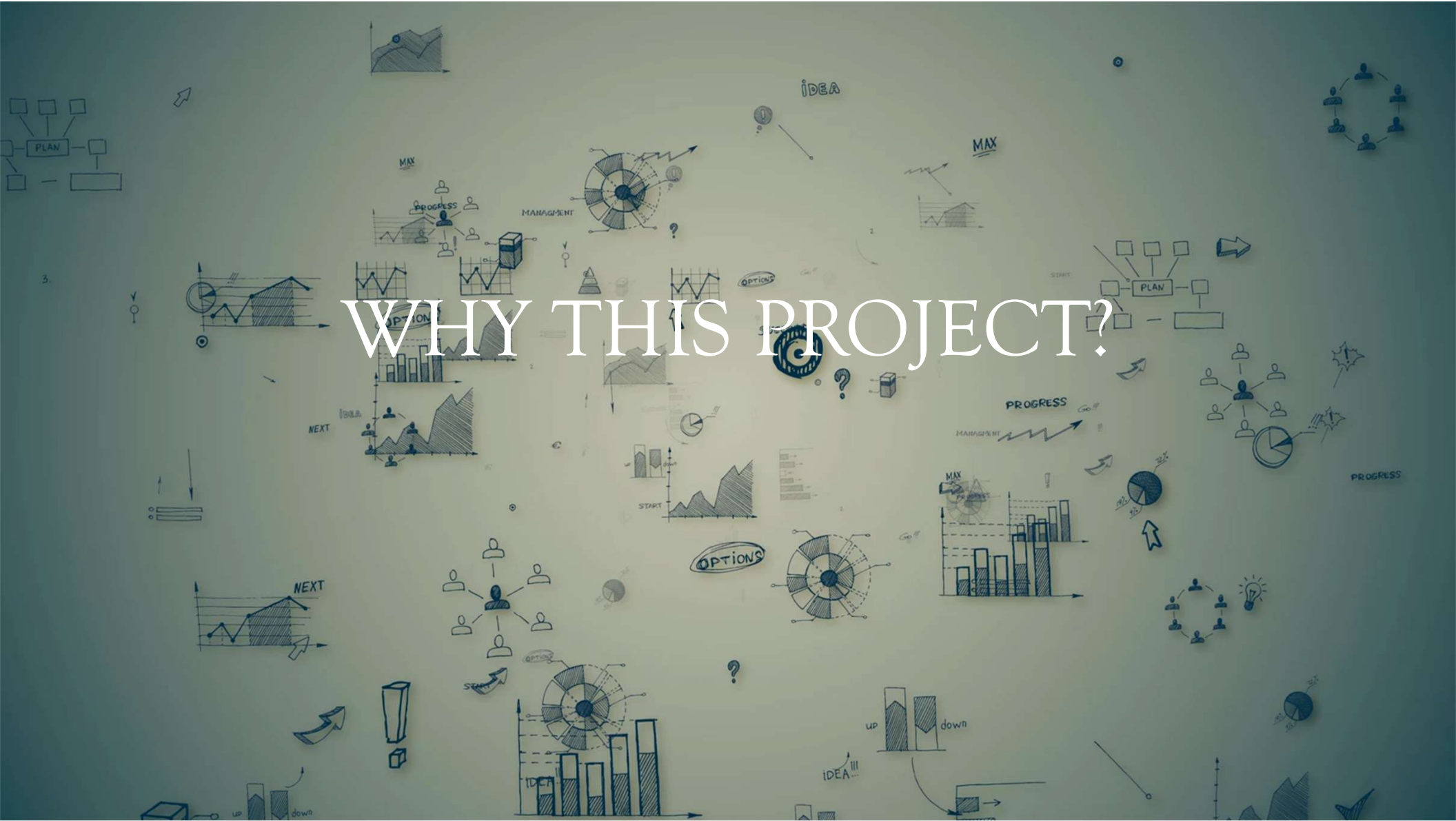


Determination of speed
of conveyor belt.



The slower it goes, the
cleaner it will be.

WHY THIS PROJECT?





WHY THIS PROJECT?

- Simplicity reigns



- Little involvement





WHY THIS PROJECT?

- ONE!



- Profit - Oriented





LIMITATIONS

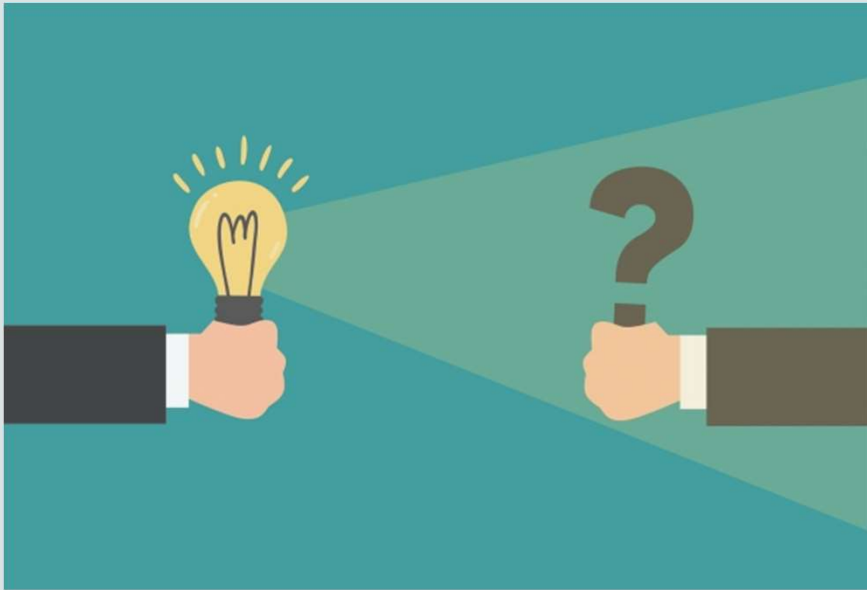
LIMITATIONS

- HYBRID CONCEPT



- DIRTY BRUSHES





THANK YOU!